

Effects of dietary oil supplementation with different fatty acid profiles on rumen fibre degrading bacteria population in goats

ABSTRACT

Effects of dietary oil supplementation on the predominant rumen fibre-degrading bacteria population were investigated. In this experiment, rumen fibre-degrading bacteria population were evaluated on 16 fistulated male goats that were randomly assigned to four treatment groups: T1: control/basal diet (CNT); T2: basal diet + olive oil (OL); T3: basal diet + palm olein oil (PO); and T4: basal diet + sunflower oil (SF). The oil content was supplemented at 6% of DM bases. Rumen content was collected from each individual animal and the DNA was extracted accordingly. The number of rumen fibre-degrading bacteria was enumerated via real-time PCR method. Significant difference ($P < 0.05$) were observed for *Ruminococcus albus* in supplemented diet as compared to T1. The other two fibre-degrading bacteria, *Fibrobacter succinogenes* and *R. flavefaciens* were not highly affected by the supplementation of the dietary oils. This study has demonstrated that supplementation of dietary oils with differing fatty acid components has no impact on the predominant rumen fibre-degrading bacteria which benefit the animals by providing extra energy from the dietary oil supplementation without compromising the ability of rumen fibre digestion process.

Keyword: Dietary oil; Supplementation; Rumen; Fibre-degrading Bacteria; PCR